



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/572,920	05/05/2006	Hiroo Iwata	2006_0408A	7027
513	7590	03/04/2010	EXAMINER	
WENDEROTH, LIND & PONACK, L.L.P.			KETTER, JAMES S	
1030 15th Street, N.W.,			ART UNIT	PAPER NUMBER
Suite 400 East				1636
Washington, DC 20005-1503				
			NOTIFICATION DATE	DELIVERY MODE
			03/04/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ddalecki@wenderoth.com  
coa@wenderoth.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/572,920	IWATA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	James S. Ketter	1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 26 January 2010.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 3-5,10-17,20,21 and 24-26 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) 3,4,12-17,25 and 26 is/are allowed.  
 6) Claim(s) 5,10,11,20,21 and 24 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 21 March 2006 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____ .

The finality of the Office Action mailed 27 August 2009 is hereby **withdrawn**. Upon reconsideration of the claimed invention and the prior art, a non-final action on the merits follows:

The amendment after final filed 26 January 2010 has been entered.

Claims 3, 4, 12-17, 25 and 26 are allowed.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pei et al. for reasons of record set forth in the previous Office Actions.

Due to amendment, claim 20 has been broadened such that the present ground of rejection applies. Applicants offered no remarks, other than noting the cancellation of the previously rejected claims.

Claims 5, 10, 11 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pei et al. in view of Firth (A, newly cited).

Claim 5 is drawn to a method of introducing a nucleic acid into cells by electroporation, comprising the step (a) of providing an electrode with a cationic surface; the step (b) of adsorbing and loading a nucleic acid onto the cationic surface of an electrode; the step (c) of allowing cells to adhere onto the surface of the nucleic acid-loaded electrode obtained in the step (b); and the step (d) of applying electric pulses to the cells, wherein the electrode with a cationic surface is a transparent electrode on which a cationic polymer is adsorbed. Claim 10 specifies within claim 5 that the transparent electrode is a glass or a transparent plastic substrate on which indium-tin oxide, indium oxide, aluminum- doped zinc oxide or antimony-doped tin oxide is deposited. Claim 11 specifies within claim 5 that the transparent electrode is a glass substrate or a transparent plastic substrate on which indium-tin oxide is deposited. Claim 21 is drawn to a method of introducing a nucleic acid into cells by electroporation, comprising the step (a) of providing an electrode with a cationic surface; the step (b) of adsorbing and loading a nucleic acid onto the cationic surface of an electrode; the step (c) of allowing cells to adhere onto the

surface of the nucleic acid-loaded electrode obtained in the step (b); and the step (d) of applying electric pulses to the cells, wherein the step (c) is carried out by incubating cells on the surface of the nucleic acid-loaded electrode.

Pei et al. has been described previously. Pei et al. differs from the claimed invention in not teaching transparent electrodes, particularly deposited indium-tin oxide electrodes. Firth teaches, e.g., , from column 5, line 36 through column 6, line 5, the use of a glass slide coated with indium-tin oxide, upon which cells are placed, grown and then electroporated. It is taught that the transparent electrode is advantageous for permitting direct viewing of the cells.

It would have been obvious to have modified the method of Pei et al. by modifying the electroporation apparatus to use transparent indium-tin oxide coated glass slides. The motivation would have come from Firth, in permitting direct viewing of the cells.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pei et al. in view of Pohl (B, newly cited).

Claim 24 is drawn to a method of introducing a nucleic acid into cells by electroporation, comprising the step (a) of providing an electrode with a cationic surface; the step (b) of adsorbing and loading a nucleic acid onto the cationic surface of an electrode; the step (c) of allowing cells to adhere onto the surface of the nucleic acid-loaded electrode obtained in the step (b); and the step (d) of applying electric pulses to the cells, wherein an electrode with the cationic surface electrode is an electrode having a micropatterned surface.

Pei et al. has been described previously. Pei et al. differs from the claimed invention in not teaching a micropatterned surface on the electrodes. Pohl teaches, e.g., at the paragraph bridging columns 2 and 3, and the five subsequent paragraphs at column 3, that grooves in the electrode surface help to position and guide the cells on and across the electrode.

It would have been obvious to one of ordinary skill in the art to have modified the method of Pei et al. by adding grooves on the surface of the electrode as taught by Pohl. The motivation to have done so would have come from Pohl, which teaches that the cells may be thus guided by the grooves, and that no pre-treatment of the cells is needed for this.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Ketter whose telephone number is 571-272-0770. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low can be reached on 571-272-0951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSK  
2 March 2010

/James S. Ketter/  
Primary Examiner, Art Unit 1636